UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0043-FEC-RI

June 20, 2001

Mr. Fred P. Patron
Senior Transportation Planning Engineer
Federal Highway Administration, Oregon Division
530 Center Street NE
Salem, OR 97301

Re: Reinitiation of Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for Independence Bridge Scour Remediation, Marion and Polk Counties, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) that addresses proposed repairs to Independence Bridge, located in Marion County and Polk County, Oregon.

Consultation on this project was initiated on February 9, 2000, with the submittal of a Biological Assessment (BA) describing the effects of a seismic retrofit. That consultation concluded with a letter of concurrence, dated March 7, 2000, that the project was not likely to adversely affect listed Upper Willamette River steelhead and chinook salmon. As a result of the seismic retrofit work, ODOT and Marion County engineers determined that an undermined pier would require stabilization. Consultation was reinitiated on December 21, 2000. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify critical habitat. This Opinion includes reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

In addition, this document also serves as consultation on Essential Fish Habitat (EFH) under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Stevens Act). An EFH analysis is required for chinook salmon (*Oncorhynchus tshawytscha*).

Questions regarding this letter should be directed to Pat Oman of my staff in the Oregon State Branch Office at (503) 231-2313.

Sincerely,

Michael R Crouse

Donna Darm
Acting Regional Administrator

cc: Rose Owens - ODOT
Bill Worcester - Marion County Public Works
Alan Lively - ODOT (w/ attachment)
Steve Mamoyac - ODFW (w/ attachment)
Rolland White - USFWS
Greg Apke - ODOT

Endangered Species Act Section 7 Consultation
&
Magnuson - Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Independence Bridge Repair Project
City of Independence
Marion and Polk Counties, Oregon

Agency: U.S. Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: June 20, 2001

Refer to: OSB2000-0043-FEC-RI

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1. ENDANGERED SPECIES ACT

1.1 Background

On December 21, 2000, the National Marine Fisheries Service received a request from the Federal Highway Administration (FHWA) for reinitiation of Endangered Species Act (ESA) section 7 formal consultation for the Independence Bridge repair project. A seismic retrofit of the bridge had previously been permitted through informal Section 7 consultation, for which a letter of concurrence was signed on March 7, 2000 (refer to OSB 2000-0043). During the course of the seismic retrofit work, underwater reconnaissance done in July 2000 revealed structural deficiencies caused by currents eroding one of the bridge piers. This project will repair the localized scour area at the base of one of the piers of the bridge. Riprap will be placed into the underwater void to stabilize the base of the pier. The fill material, approximately 1,100 cubic yards of clean, large riprap, will be loaded from the bridge deck onto a barge and then put into place by an excavator. This temporary fix will be followed up by a hydrological analysis to identify and correct the cause of this severe channel scouring.

The project applicant is the Oregon Department of Transportation (ODOT). The Marion County Public Works Department, working in cooperation with ODOT, has designed the project and will construct the project. The FHWA will be providing funding for the work, and has requested reinitiation of consultation. The work will require a US Corps of Engineers (USCOE) fill permit.
The project is located in the town of Independence, on the border of Marion and Polk Counties where the bridge crosses the Willamette River. The FHWA/ODOT is proposing to place 1,100 cubic yards of riprap around the footings at the base of Pier 2 at the eastern end of the bridge.

The FHWA/ODOT determined that the proposed action is likely to adversely affect the Upper Willamette River (UWR) chinook salmon and UWR steelhead which are present in the project area. The effects determination was made using the methods described in Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale (NMFS 1996).

This biological opinion (Opinion) is based on the information presented in the original biological assessment (BA) and developed during the consultation process. The consultation process includes electronic correspondence and phone communications to obtain additional information and clarify the BA.

The objective of this Opinion is to determine whether the action to stabilize the stream bank and place riprap is likely to jeopardize the continued existence of the UWR chinook salmon and UWR steelhead, or destroy or adversely modify critical habitat.

1.2 Proposed Action

The proposed action will place an estimated 1,100 cubic yards of riprap at one location in the Willamette River at the project location described above. Approximately 5,000 square feet of river bottom will be covered. This action will take place within the ordinary high water (OHW) line of the river. To carry out the scour remediation, an excavator and the riprap will be placed on two barges that will be lashed together and anchored upstream of the area to be filled. The barge will be tied off to the bridge pier in addition to being anchored in place. The barges are about 24-30 feet long and 40-60 feet wide, and will draw about five feet when fully loaded. A boat will maneuver the barges into place and around the work area. The excavator bucket will have a "thumb" that will allow placement of riprap at the base of the Pier 2 footings. The depth of the scour hole is approximately 26 feet from the surface of the water, and the reach of the excavator bucket is approximately 30 feet, so the riprap can be placed rather than dropped haphazardly. ODOT divers will be in the water in order to communicate with the excavator operator about the proper placement of the riprap. The entire operation, from moving the barge into place and completing the placement of riprap, is estimated to take no longer than four weeks.

The disturbed aquatic habitat is within the critical habitat for UWR chinook salmon and UWR steelhead. The scour remediation will prevent the bridge from requiring more invasive repairs should the pier fail due to high water events in coming years. Once a hydrological analysis of the site is complete, a permanent solution to the scour problem will be pursued. The permanent solution will require reinitiation of consultation. Mitigation for the immediate scour remediation will be completed at that time.

1.3 Biological Information and Critical Habitat

Within the Willamette River basin, the National Marine Fisheries Service (NMFS) has listed the UWR steelhead and UWR chinook salmon as threatened under the Endangered Species Act (ESA). The UWR steelhead Evolutionarily Significant Unit (ESU) was listed on March 25, 1999 (64 FR 14517) and UWR chinook salmon ESU was listed on March 24, 1999 (64 CFR 14308). Protective regulations for these species were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Critical habitat was designated for UWR chinook salmon and UWR steelhead on February 16, 2000 (65 FR 7764). This designation of critical habitat includes all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

Biological information on UWR chinook salmon may be found in the Status Review of Chinook Salmon from Washington, Idaho, Oregon, and California (Myers et al. 1998), and information on UWR steelhead is in NMFS status reviews for west coast steelhead in Busby et al (1995, 1996).

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species or destroy or adversely modify critical habitat. This analysis involves the: (1) Definition of the biological requirements and current status of the listed species; and (2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, and juvenile rearing of the UWR chinook salmon and UWR steelhead.

1.4.1 Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NMFS starts with the determinations made in its decision to list UWR chinook salmon and UWR steelhead for ESA protection and also considers new data available that is relevant to the determination (Myers et al, 1998, and Busby et al 1995, 1996).

The relevant biological requirements are those necessary for UWR chinook salmon and UWR steelhead to survive and recover to naturally reproducing population levels at which protection

under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, spawning, holding, and rearing. The current status of the UWR chinook salmon and UWR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

Production of wild UWR chinook salmon occurs primarily in three major tributaries to the Willamette: the North Santiam River, the Clackamas River, and the McKenzie River. Of these populations, the McKenzie River chinook salmon is the most robust. However, adult returns to the McKenzie River have declined from highs of 10,000 - 13,000 during 1988 to 1991, to recent lower levels of 3,000 - 4,000 from 1994 to 1998. These levels are less than what would be required to fully seed the available habitat (Oregon Department of Fish and Wildlife: January, 1999 stock status report at *www.dfw.state.or.us/springfield/McKChs.htm*.). They are also considerably lower than the historic abundance of systems like the Clackamas River, from which an estimated 12,000 spring chinook were harvested in 1893.

UWR steelhead are a distinct population from steelhead below the Willamette Falls. According to StreamNet, the five year moving average has gone from 12,554 steelhead in 1964 to 3,313 in 1999 (PSMFC 2001). A recent steelhead status report done by ODFW (Chilcote, 2001) has summarized the status of a number of populations throughout the state:

> In the early 1990s, most populations entered a period of decline. For populations in the lower Columbia and upper Willamette ESUs, this decline appears to have been a feature that started prior to 1990. However, the record for the majority of other populations in Oregon, provides evidence that this decline may be part of a normal cyclic pattern. Rather than a chronic, long-term decline, as appears the case for the Willamette and lower Columbia populations, the pattern observed for most other populations suggests a long-term cyclic phenomena. Indeed, in the last 5 years several populations appear to be entering the ascending portion of this cycle.
>
> The greatest concentration of vulnerable populations appeared to be those that belonged to the mid-Columbia ESU. Two populations, the Deschutes and Umatilla, met the criteria for an endangered classification. A majority of the populations in this ESU are at abundance levels that are less than 50% of maximum seeding. Nearly equal, in terms of vulnerability, were the Upper Willamette populations. Only did 2 out 5 of these populations were at levels of escapement greater than necessary for 50% of maximum seeding. In addition, one population, the North Santiam, met the criteria for a threatened classification. Although, the PVA [population viability analysis] analysis did not suggest that the two populations representing the lower Columbia ESU, the Sandy and Clackamas, were at risk of extinction, these populations show other troubling signs. Both exhibit a chronic downward trend in abundance with little indication an underlying cyclic

pattern exists that might reverse this trend. In addition, within the last 6 years, both populations have experienced at least one escapement of wild fish that was less than the viable threshold. Therefore, these populations may be more vulnerable than the PVA analysis seems to suggest.

1.4.2 Environmental Baseline

The current range-wide status of the identified ESUs may be found in Myers et al. (1998) and Busby et al. (1995, 1996). The identified action will occur within the range of UWR chinook salmon and UWR steelhead. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, and for generating sediment and pollutants. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities include the immediate watershed where the riprap and bridge rehabilitation will occur, and those areas upstream and downstream that may reasonably be affected temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of the Willamette River extending upstream to the edge of disturbance, and extending downstream 100 feet. Other areas of the Willamette River watershed are not expected to be directly or indirectly impacted. UWR chinook and UWR steelhead are found throughout the Willamette River basin. The project area is primarily migratory habitat for adult and juvenile steelhead and chinook salmon; spawning takes place in tributaries.

This stretch of the Willamette, the mid-mainstem reach from the Santiam River to the Willamette Falls, is listed on the Oregon Department of Environmental Quality's 303(d) list of water quality limited streams for biological criteria (fish skeletal deformities), summer temperatures, toxics in the form of mercury concentrations, and fecal coliform (ODEQ 2000). The lack of canopy vegetation to shade the river has contributed to the higher summer temperatures, and agricultural pesticides are suspected as the cause for skeletal deformities observed in juvenile pikeminnows. The mainstem Willamette River has lost most of the historic off-channel habitat because of agricultural practices, flood control, and road construction. This has reduced the overall habitat complexity, which results in changes in species abundance, composition, and distribution. The Willamette River Basin Task Force report (1997) estimates that 25% of the main channel stream banks have been stabilized with rock riprap, which indicates that a large proportion of the mainstem is devoid of riprian vegetation that would contribute to the deposition of large woody debris, shade to cool the river in the summer, and benthic input. In the immediate vicinity of the project, the river runs through a broad flood plain that is heavily developed and urbanized; it is within the urban growth boundary of the city of Independence. The condition of riparian vegetation is poor, and large woody debris is not present.

Based on the best available information on the current status of UWR steelhead and chinook salmon range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of

the identified ESUs within the action area are not currently being met. The Willamette River has degraded habitat resulting from agricultural and forestry practices, water diversions, road construction, urbanization, recreation, and flood control. The following habitat indicators are either at risk or not properly functioning within the action area: temperature, turbidity/sediment, chemical contamination/nutrients, substrate, large woody debris, off-channel habitat, pool frequency and quality, refugia, streambank condition, floodplain connectivity, peak/base flows, and disturbance history. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of UWR steelhead and UWR chinook salmon.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale (NMFS 1996). The effects of actions are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat factors in the project area.

The current status of the site is degraded because of the lack of riparian vegetation, the lack of large woody debris (instream structure), the lack of flow refugia, the proximity of the highway to the river, and the effects of existing riprap on channel morphology, water temperatures, and salmonid behavior.

The proposed action has the potential to cause the following impacts to UWR chinook and UWR steelhead, or designated critical habitat:

1. The use of riprap has the potential to change salmonid migration and rearing behavior. Reduced densities of chinook have been found in the vicinity of riprap-stabilized banks that do not incorporate large woody debris (Beamer and Henderson, 1998). In this instance, the placement of 1,100 cubic yards of one-ton boulders will cover up approximately 5,000 square feet of the natural substrate of the river, which at this location consists of small to medium sized cobbles. This area is not known to be suitable spawning habitat for either UWR steelhead or UWR chinook. This river reach is primarily a migration corridor, with some juvenile rearing. Consequently, the placement of riprap at this location is expected to have long-term, but localized effects, by reducing thermal refugia, velocity refugia, resting habitat for migrating salmon, and juvenile rearing habitat.

2. Any in-water work has the potential to increase erosion from the streambed, and turbidity in the river. Turbidity, at moderate levels, has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish, and may also interfere with feeding (Spence *et al.* 1996). Behavioral effects on fish, such as

gill flaring and feeding changes, have been observed in response to pulses of suspended sediment. Localized increases of erosion/turbidity during in-water work will likely displace UWR chinook, UWR steelhead, and other fish in the project area, and disrupt normal behavior. These effects are expected to be temporary (occurring during riprap placement) and localized.

The effects of these activities on UWR chinook, UWR steelhead, and aquatic habitat will be limited by implementing construction methods and approaches, included in the project design, that are intended to avoid or minimize impacts. These include:

1. Staging the operation from the deck of the bridge and from a barge. The option of loading the barge from the shore was rejected due to the shallow water near the boat ramp. By loading the barge from the bridge, impacts to fish that may be present in the vicinity of the boat ramp will be avoided.

2. Placing the riprap during the ODFW designated in-water work period. Since this stretch of the river is primarily used as a migration corridor for adults and juveniles, carrying out the work between July and September will ensure that no migrating fish are harmed.

3. Using only large riprap (class 2000 English, or in other words, one ton boulders) is intended to ensure that the riprap will stay in place, and not be washed downstream during high water events. Using an excavator to place the riprap will limit turbidity and sedimentation.

4. Mitigating for the loss of instream habitat will be accomplished by restoring similar riparian function in another area of the same watershed.

1.5.2 Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for UWR chinook salmon and UWR steelhead consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

The proposed actions will affect critical habitat. In the short term, temporary increase of sediments and turbidity and disturbance of aquatic habitat is expected. An area of about 5,000 square feet of river substrate will be covered by large boulders. According to ODFW, this area of the river is a migratory corridor, and is not used by spring chinook for spawning (Mamoyac and Taylor, personal communication of December 1, 2000 to Pat Oman). The NMFS does not expect that these actions will diminish the value of riverine habitat for survival of UWR chinook salmon or UWR steelhead, and there will be no impact to riparian habitat within the action area.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area has been defined as immediate project area upstream to the edge of disturbance (the area around Pier 2 of the bridge) and extending downstream 300 feet beyond the edge of disturbance, the area estimated to be subject indirectly to turbidity and sedimentation. A wide variety of actions occur within the Willamette River basin, within which the action area is located. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future ODOT transportation projects are planned in the Willamette River watershed. Each of these projects will be reviewed through separate section 7 consultation processes and therefore are not considered cumulative effects.

1.6 Conclusion

After reviewing the current status of UWR chinook salmon and steelhead, the environmental baseline for the action area, the effects of the proposed Independence Bridge scour remediation and the cumulative effects, it is the NMFS' biological opinion that this project, as proposed, is not likely to jeopardize the continued existence of the UWR chinook salmon or UWR steelhead, and is not likely to further destroy or adversely modify designated critical habitats. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse effects due to sediment/turbidity impacts and minor but long-term habitat loss.

1.7 Reinitiation of Consultation

This concludes formal consultation on the Independence Bridge scour remediation project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: 1) The amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification

or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of UWR chinook salmon because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during the placement of riprap in the riparian area (lethal and non-lethal). Effects of actions such as the placement of riprap are largely unquantifiable in the short-term, and are not expected to be measurable as long-term harm to habitat features or by long-term harm to chinook salmon behavior or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological report, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take includes the river and associated riparian habitat in the area of riprap placement on the streambed and streambank of the Willamette River, extending upstream to the edge of disturbance, and extending downstream 300 feet.

2.2 Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species.

1. To minimize the amount and extent of incidental take from riprap placement in the Willamette River channel, measures shall be taken to limit the extent of rock placement in the channel, and to schedule such work when the fewest number of fish are expected to be present.

2. To minimize the amount and extent of incidental take from staging the construction

activities from the deck of the bridge and from the barge that will be anchored in the river, effective pollution control measures shall be developed and implemented to minimize the potential for fuel spills and other contamination into and within the river.

3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to avoid impacts to riparian and instream habitat, or where impacts are unavoidable, to mitigate for the loss of instream habitat by restoring similar riparian function at another location within the watershed.

4. To prevent further erosion to the bridge piers, a hydrological analysis of the cause of the severe river scour conditions will be completed and a permanent solution to the scour problem will be proposed, based on the findings of the hydrological study.

5. To ensure this Opinion is meeting its objective of minimizing the likelihood of take from permitted activities and that the proposed mitigation actions are performing adequately, a comprehensive monitoring and reporting program shall be carried out.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA/ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (riprap placement), the FHWA/ODOT shall require completion of the following:

    a. All work will be done within the time recommended by the ODFW district biologist and watershed manager, and before the beginning of UWR chinook salmon and UWR steelhead adult migration.

    b. All work will be staged from the highway/bridge deck, with all equipment operating from the elevation of the highway/bridge deck. Equipment entry into the 2-year floodplain will be limited to use of a barge, a boat to maneuver the barge, and an OSHA "safety" boat which will be anchored in the water.

    c. Containment measures adequate to prevent construction materials from entering any waterway shall be implemented.

    d. Riprap will be placed individually and not end-dumped.

2. To implement Reasonable and Prudent Measure #2 (pollution control measures) above, the FHWA/ODOT shall be required to complete a Pollution Control Plan (PCP), which will include the following:

a. Vehicle maintenance, re-fueling of vehicles and storage of fuel, except for that needed to service the boats and barge, shall be done at least 150 feet from the 2-year flood elevation, or in an adequate fueling containment area to be approved by NMFS or by the ODOT Regional Environmental Coordinator. The equipment and vehicles staging activities from the bridge deck will be limited to the vehicles needed to deliver riprap and place it on the barge in the water. All other staging will occur at least 150 feet from the 2-year floodplain.

c. At the end of each work shift, vehicles shall be stored greater than 150 feet (horizontal distance) from the 2-year flood elevation, or in an area approved by the project manager after consultation with NMFS. This does not apply to the boats and barge.

d. Adequate fuel spill containment measures for the boats and barge refueling activities will be implemented as part of the PCP. This will include ensuring that hazmat booms are available on-site in the event of a fuel spill.

3. To implement Reasonable and Prudent Measure #3 (minimization of habitat loss) above, the FHWA/ODOT shall be required to do the following:

a. Only clean riprap of class 2000 size or larger will be used to complete the scour repair project.

b. No more than 1,100 cubic yards of rock will be placed.

c. Compensate for the loss of instream habitat by restoring riparian functions along at least 5,000 square feet of shoreline as near to the action area as possible. In determining the nature and extent of mitigation required, the USCOE/ODOT will consider the functional values lost and the likelihood of success.

i. The ODOT will give preference to types of mitigation most likely to achieve a level of ecological function that is equal to or greater than was lost due to completion of the project.

ii. If mitigation close to the project area is not feasible due to space limitations at the project site, off-site mitigation will be undertaken within the same watershed (the same 5th order HUC), or otherwise as near to the action area as possible.

iii. Mitigation will be measured in actual acreage and, to the extent possible, ecosystem function.

iv. Mitigation will be completed within 4 years.

4. To implement Reasonable and Prudent Measure #4 (hydrological analysis) above, the FHWA/ODOT shall be required to do the following:

   a. Complete an analysis of the hydraulics upstream and around the bridge piers in order to identify the cause of the erosion problems, and propose a permanent solution.

   b. Implement a solution to the erosion problem within four years of completion of the pier scour repair.

5. To implement Reasonable and Prudent Measure #5 (monitoring and reporting) above, the FHWA shall ensure that:

   a. Within 30 days of completing the project, the FHWA/ODOT will submit a monitoring report to NMFS describing the success meeting their permit conditions. This report will consist of the following information:

      i. Project identification - name, OSB number, and COE permit number.

      ii. Starting and ending dates of work completed for this project; and

      iii. The FHWA/ODOT contact person.

      iv. Pollution and erosion control. Upon request, a summary of pollution and erosion control compliance, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials shall be provided.

      v. A narrative assessment of the project's effects on natural stream function.

      vi. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) before, during and after project completion.

         1. Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.

         2. Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.

         3. Relevant habitat conditions include characteristics of channels,

streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

b. All monitoring reports shall be submitted to:

National Marine Fisheries Service
Oregon Habitat Branch, Habitat Conservation Division
Attn: OSB-2000-0043
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

3. ESSENTIAL FISH HABITAT

Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Act to establish new requirements for "Essential Fish Habitat" (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH, defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed groundfish (PFMC 1998a) and coastal pelagics (PFMC 1998b) fisheries. The Council has also recommended an EFH designation for the Pacific salmon fishery (PFMC 1999). EFH includes those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (*i.e.*, properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH, and it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

The consultation requirements of section 305(b) of the Magnuson-Stevens Act [16 U.S.C. 1855(b)] provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH; and
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the

agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

3.1 Identification of Essential Fish Habitat

The Columbia River estuary and the Pacific Ocean off the mouth of the Columbia River are designated as EFH for groundfish and coastal pelagic species (PFMC 1998a and PFMC 1998b). The marine extent of groundfish and coastal pelagic EFH includes those waters from the nearshore and tidal submerged environments within Washington, Oregon, and California state territorial waters out to the exclusive economic zone (370.4km) offshore between the Canadian border to the north and the Mexican border to the south.

The designated salmon fishery EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by PFMC (PFMC 1999). Chief Joseph Dam, Dworshak Dam, and the Hells Canyon Complex (Hells Canyon, Oxbow, and Brownlee Dams) are among the listed man-made barriers that represent the upstream extent of the Pacific salmon fishery EFH. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). In the estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999).

3.2 Proposed Action

The proposed action is detailed above, in section 2 of this Opinion. The proposed action area includes the mainstem Willamette River, from the immediate vicinity of the scour repair extending downstream the entire width of the river for a distance of 300 feet. The proposed action area encompasses the Council-designated EFH for chinook (*Onchorhynchus tshawytscha*) and for coho (*Onchorhynchus kisutch*) salmon. A description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to these species' EFH from the above proposed FHWA action is based on this information.

The objective of this EFH consultation is to determine whether the proposed action may adversely affect EFH for the species listed above. Another objective of this EFH consultation is to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed action.

3.3 Effects of the Proposed Action

NMFS expects that the effects of this project on chinook and coho salmon EFH are likely to be

within the range of effects to listed coho and chinook salmon considered in the ESA portion of this consultation. Based on that analysis, NMFS finds that the proposed project is likely to adversely affect EFH for coho and chinook salmon.

3.4 Conservation Recommendations

The FHWA/ODOT have provided for minimization of the potential effects to EFH in the proposed project design. The reasonable and prudent measures and the terms and conditions outlined above are applicable to chinook salmon EFH. Therefore NMFS adopts each of those measures here as EFH conservation recommendations. If the FHWA/ODOT adopt these recommendations, potential adverse effects to EFH will be minimized.

3.5 Consultation Renewal

The FHWA/ODOT must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920[k]).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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